20. (Added). A method for altering characters of a plant, comprising steps of:

introducing the gene of claim 10 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.

B3

21. (Added). A method for altering characters of a plant, comprising steps of:

introducing the gene of claim 11 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.

telephonically confirmed that claim 3 to be cancelled per paper # 14 2/14/00 AM

REMARKS

After entry of this amendment claim 1-2 and 4-21 are pending in the present application. The pending claims are presented in Appendix 1. In the Office Action, claims 1-9 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly lacking written description. The claims were also rejected under 35 U.S.C. § 112, first paragraph, for allegedly lacking enablement. The claims also stand rejected under 35 U.S.C. § 112, second paragraph. for allegedly being indefinite. Applicants note with appreciation that claims 1-9 have been deemed free of the prior art. Each of the rejections will be addressed in the order in which they were raised.

New claims 10-21 are added to claim more specifically the subject matter of the present invention. New claim 11 and amended claim 2 refer specifically to the amino acid homology of the of the claimed polypeptides. Support for the amendments is found in Table 1 and on page 15, lines 17-19. Applicants note however, that such amendment are not an admission that a transcription factor having less than 37% identity to the exemplified sequence is not capable of later plant characteristics as claimed here. Support for the remaining claims is replete throughout the specification. No new matter has been added by this amendment.

B

Rejections under 35 U.S.C. § 112, first paragraph

Applicants respectfully traverse the rejection of the claims for allegedly lacking written description and enablement. The examiner alleges that the claims lack written description because the claimed genus of nucleic acid molecules has allegedly not been described by in the manner required by *University of California v. Eli Lilly* 43 USPQ2d 1398 (Fed. Cir. 1997).

The Examiner appears to rely on the court's holding in *University of California* for the broad proposition that "the disclosure of a few gene sequences" does not provide an adequate written description of all nucleic acids encoding transcription factors of the invention (*see*, page 3, lines 11-17 of the Office Action). Applicants respectfully submit that the Federal Circuit in *University of California* did not hold so broadly. In fact, the court held only that the particular disclosure at issue there was insufficient to support a claim to a large genus of nucleic acid molecules. The court did note, however, that the written description requirement can be fulfilled in any of a number of ways, so long as the specification describes the invention "in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention." 43 USPQ2d at 1404. For a chemical invention, an adequate description "requires a precise definition, such as by ***structure***, formula, chemical name, or ***physical properties***...." (Emphasis added). Accordingly, as described below, the present specification provides ample written description for the pending claims, precisely as required by the court in *University of California*.

In the present case, the claims are directed to nucleic acids and transgenic plants comprising polynucleotides which hybridize to the exemplified nucleic acid sequence (*i.e.*, a sequence from residues 190- 807 of SEQ ID NO:1) under stringent conditions This claim language defines a *physical property* of the invention, as explicitly required by the court in *University of California*. Further, the ability of a nucleic acid to hybridize to a particular sequence, under stringent conditions, reflects the *structure* of the nucleic acid, *i.e.* that its primary *structure*, or nucleotide sequence, is similar to the recited sequence. Thus, the description of the claimed invention satisfies the written description requirement as set forth by the court in *University of California* on at least two grounds, *i.e.* structure and physical properties.

For the reasons described above, Applicants respectfully submit that the specification meets the description requirements for the claimed invention, and the rejections under 35 U.S.C. §112, first paragraph, should be withdrawn.

The Examiner also rejects the claims under 35 U.S.C. § 112, first paragraph, asserting that the enablement provided by the specification is not commensurate with the scope of the claims. According to the Examiner, because the specification does not provide other examples of transcription factors within the scope of the invention, undue experimentation would be required to use the nucleic acids of the invention to control plant height and internode length. Applicants respectfully traverse these rejections.

To establish a *prima facie* case of non-enablement, the Examiner must show that undue experimentation would be required to make and use the claimed invention. Even if the practice of the claimed invention requires a considerable amount of experimentation, it is not necessarily "undue" experimentation:

> The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or it the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988) (citing *In re Angstadt*, 190 USPQ 214 (CCPA 1976). MPEP § 2164.06.

The Examiner bases the thrust of the argument on the assertions that "it would require undue experimentation to produce, define, and evaluate these variants for enzymatic function." (*see*, Office Action, page 5, lines 1-2). In fact, the specification provides ample guidance to make and use the nucleic acids of the invention. For example, the specification describes methods of isolating polynucleotides, for example, by using PCR primers disclosed here. *See, e.g.*, page 7, line 21-32. The specification provides specific teaching for identifying polypeptides and polynucleotides with the physical properties recited in the claims. For example, Example 2 describes analysis of the sequences of the invention. The specification also provides teaching to introduce the polynucleotides into plants and to screen for altered phenotypes such as altered height and internode length. Such methods are well known to those of skill in the art, and are thoroughly described in the specification.

Thus, Applicants have provided: (i) specific conditions to isolate polynucleotides commensurate with the scope of the claims; and (ii) detailed, step-by-step teaching to introduce the polynucleotides into plants and identify polynucleotides with the ability to modulate transcription and thereby modulate height and internode length. The Examiner has provided no evidence that any of the above steps is not entirely routine and commonly practiced in the art.

For the reasons described above, Applicants respectfully submit that the pending claims are fully enabled by the specification as originally filed. Accordingly, the rejections under 35 U.S.C. § 112, first paragraph, should be withdrawn.

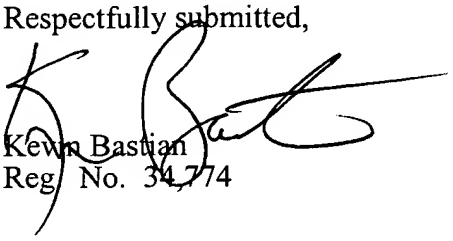
Rejections under 35 U.S.C. § 112, second paragraph

The rejections of the claims for allegedly being indefinite are overcome by the above-amended claims. In particular, the term "having" has been replaced by the term "comprising" in claim 1. The characters of the plants of the invention are now explicitly recited to be those selected from the group consisting of plant height and internode length. Claim 4 has been amended to delete reference to "plant body". Finally, the claim objections referred to on pages 6-7 are also addressed in the above-amended claims.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at 415-576-0200.

Respectfully submitted,



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1. (Amended). A gene [having] comprising DNA which is selected from a) or b):

a) DNA [having] comprising a nucleotide sequence from the 190th position to the 807th position of a nucleotide sequence represented in SEQ.ID NO. 1 of Sequence Listing: or

b) DNA which hybridizes to DNA of a) under stringent conditions, and encodes a transcription factor capable of altering characters of a plant, wherein the characters of a plant include one selected from the group consisting of the height of a plant and the length of an internode.

2. (Amended). A gene encoding a transcription factor which is selected from i) or ii):

i) a transcription factor having an amino acid sequence from the 1st position to the 206th position of an amino acid sequence represented in SEQ. ID NO. 2, or

ii) a transcription factor having an amino acid sequence in which one or more amino acids of 1) are subjected to deletion, substitution, or addition, and being capable of altering characters of a plant, wherein said amino acid sequence includes CSFCKREFRSAQALGGHMNVH and has more than 37% of amino acid sequence homology in the full-length amino acid sequence compared with the amino acid sequence of i), and wherein the characters of a plant include one selected from the group consisting of the height of a plant and the length of an internode.

[3 (Canceled). A gene according to claim 1, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.]

4. (Amended). A method for producing a transgenic plant, comprising the steps of:

introducing [a plant cell with] the gene of claim 1 into a plant cell; and

regenerating [a plant body from] the plant cell [having the introduced gene] into a transgenic plant.

5. (Amended). A method according to claim 4, wherein the plant [belongs to] is a dicotyledon.

6. (Amended). A method according to claim 5, wherein the plant [belongs to] is a member of the Solanaceae family.

7. (Amended). A method according to claim 6, wherein the plant [belongs to] is a member of the Petunia genus.

8. A method according to claim 4, wherein the gene is incorporated into a plant expression vector.

9. A transgenic plant produced by the method of claim 4.

10. (Added). A gene comprising DNA which is selected from a) or b):

a) DNA comprising a nucleotide sequence from the 190th position to the 807th position of a nucleotide sequence represented in SEQ. ID NO. 1 of Sequence Listing; or

b) DNA which hybridizes to DNA of a) under stringent conditions, and encodes a transcription factor capable of altering characters of a plant in the same manner as DNA of a).

11. (Added). A gene encoding a transcription factor which is selected from i) or ii):

i) a transcription factor having an amino acid sequence from the 1st position to the 206th position of an amino acid sequence represented in SEQ. ID NO. 2, or

ii) a transcription factor having an amino acid sequence in which one or more amino acids of i) are subjected to deletion, substitution, or addition, and being capable of

altering characters of a plant in the same manner as the transcription factor of i), wherein said amino acid sequence includes CSFKREFRSAQALGGHMNVH and has more than 37% of amino acid sequence homology in the full-length amino acid sequence compared with the amino acid sequence of i).

12. (Added). A method for producing a transgenic plant, comprising the steps of:

introducing the gene of claim 2 into a plant cell; and
regenerating the plant cell into a transgenic plant.

13. (Added). A method for producing a transgenic plant, comprising the steps of:

introducing the gene of claim 10 into a plant cell; and
regenerating the plant cell into a transgenic plant.

14. (Added). A method for producing a transgenic plant, comprising the steps of:

introducing the gene of claim 11 into a plant cell; and
regenerating the plant cell into a transgenic plant.

15. (Added). A transgenic plant produced by the method of claim 12.

16. (Added). A transgenic plant produced by the method of claim 13.

17. (Added). A transgenic plant produced by the method of claim 14.

18. (Added). A method for altering characters of a plant, comprising steps of:
introducing the gene of claim 1 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected prom the group consisting of a height of a plant and a length of an internode.

19. (Added). A method for altering characters of a plant comprising steps of:

introducing the gene of claim 2 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.

20. (Added). A method for altering characters of a plant, comprising steps of:

introducing the gene of claim 10 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.

21. (Added). A method for altering characters of a plant, comprising steps of:

introducing the gene of claim 11 into a plant cell; and

regenerating the plant cell into a transgenic plant, wherein the characters of a plant include one selected from the group consisting of a height of a plant and a length of an internode.